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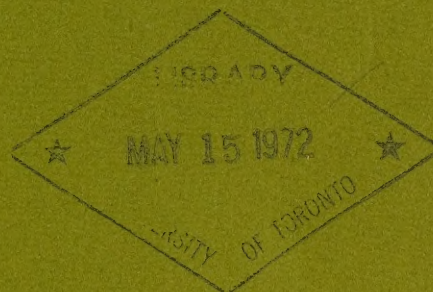
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CAPITAL FORMULA

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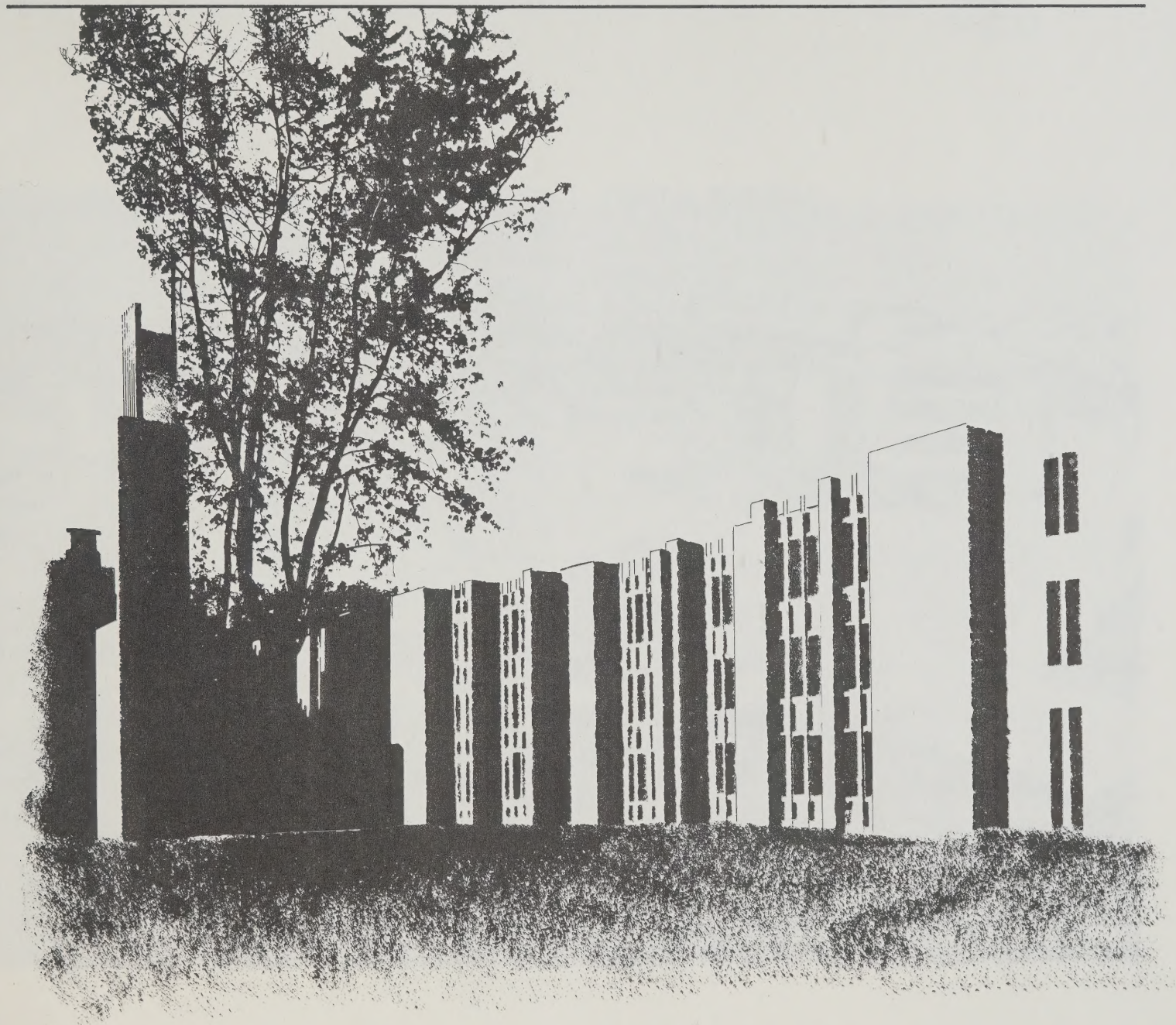
A description of the formula for calculating yearly allocations and long-range entitlements of funds for capital assistance to universities in Ontario.

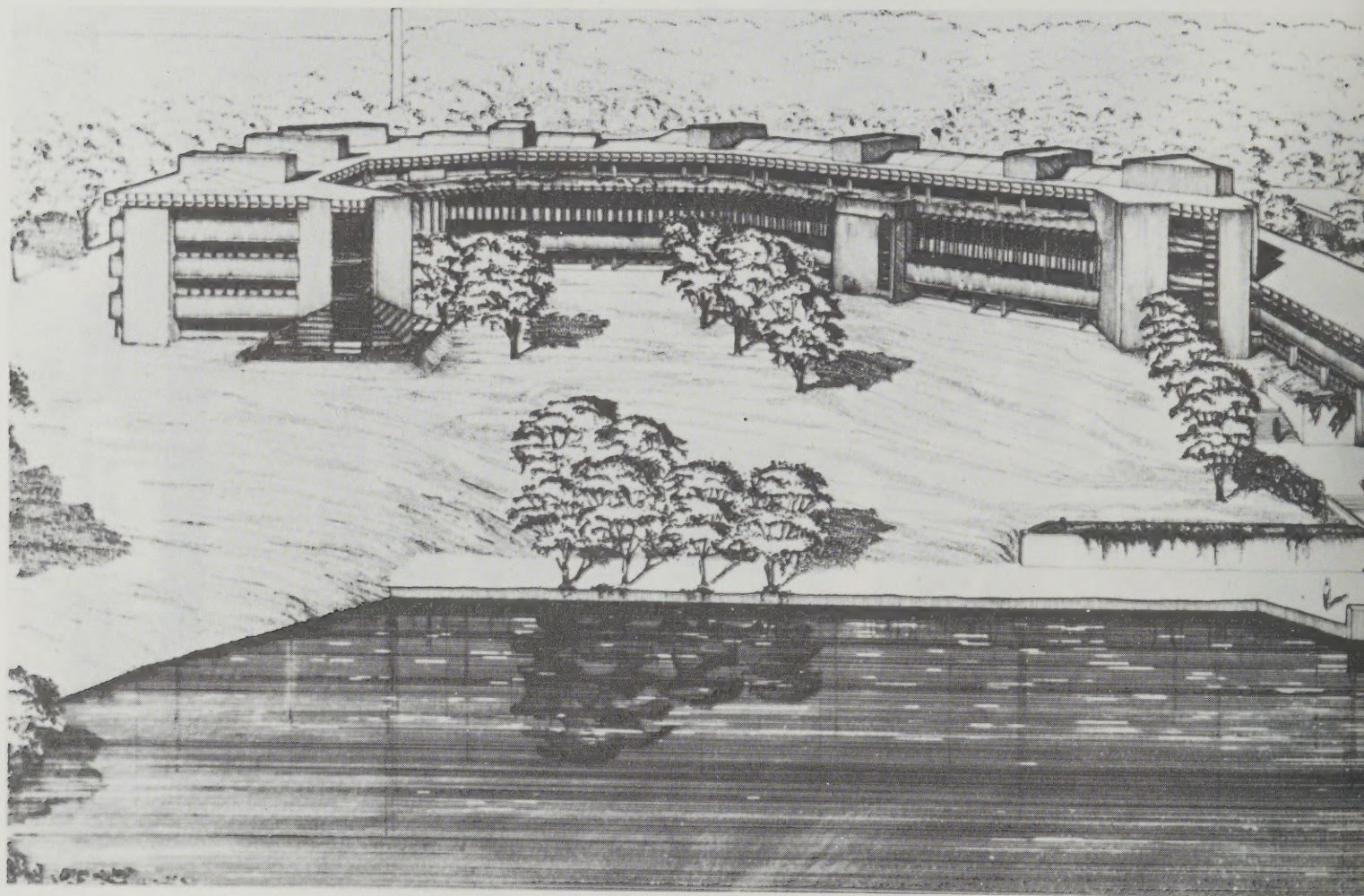




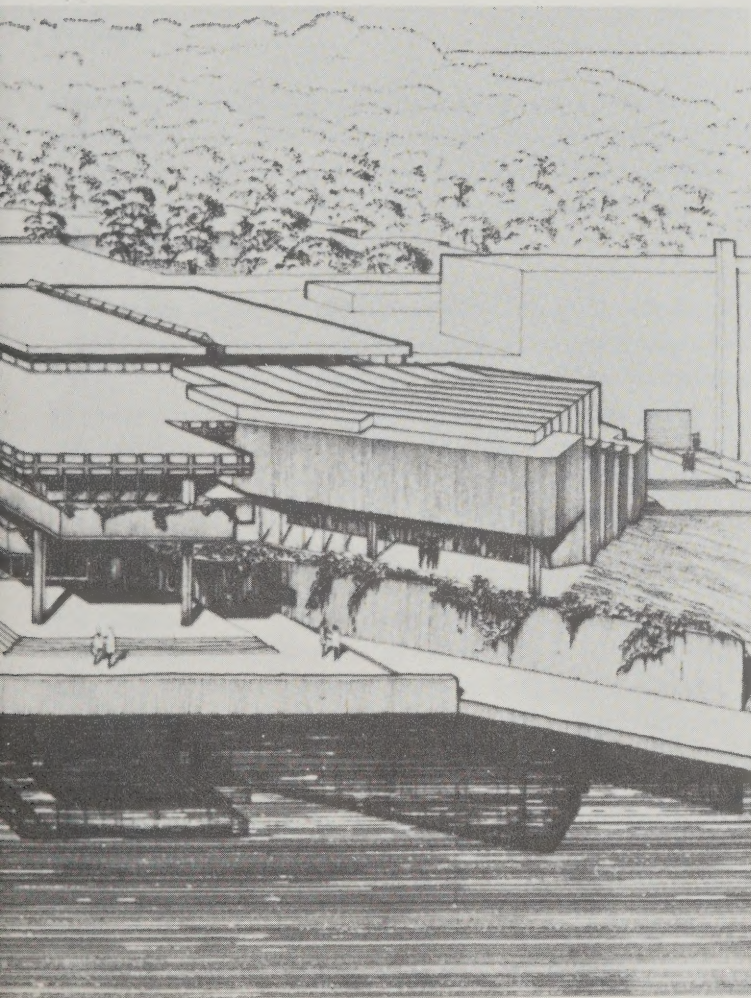
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CAPITAL FORMULA

A description of the formula for calculating yearly allocations and long-range entitlements of funds for capital assistance to universities in Ontario.

Ontario Department of Colleges & Universities
Mowat Block, Queen's Park

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Capital formula

Preface:

This paper was originally distributed in September 1970 in mimeograph form under the title "Interim Capital Formula". It is unchanged except for the description of the revisions and additions which have been made in the past year. These are summarized at the end of the text portion.

The formula has been in effect since April 1st, 1969, and almost enough time has passed so that its success or otherwise might be judged. It should be acknowledged immediately that the response by the universities has been encouragingly positive and highly commendable. They and their architects have accepted and conquered the challenge of restricted unit costs which at first seemed to them too restrictive. That they have done this without any apparent loss in quality is gratifying.

The addition of the cyclical renewal feature this year allows a further reduction in the funds allocated for "non-formula" projects, e.g. site services, utilities, and land acquisition. Alteration projects are now "formula" and the university is free, within its entitlement, to choose to renovate, alter or to build anew.

The orderly long-range planning now possible both in the universities as it pertains to physical facilities, and in the government as it pertains to funding, is almost entirely due to the acceptance of the capital formula. The comforting fact that entitlements are cumulative so that wrongs can be righted, and equitable distribution of funds in periods of scarcity is guaranteed, has tended to

vitate many anxieties regarding the long-range allocation of capital funds.

It is still acknowledged that the parameters or standards of the formula must always be examined and tested. The 96 net assignable square feet, the \$55 per net assignable square foot and the various discounts, etc., all must be capable of withstanding the closest scrutiny for fairness. The Ontario Universities Physical Resources Survey should allow for such continuous study.

J. Douglas McCullough,
*Director of Architectural Services*¹

9th September, 1971.

¹Now Director, Capital Support
Department of Colleges & Universities

MEMORANDUM

TO THE DEPUTY MINISTER OF UNIVERSITY AFFAIRS

RE: INTERIM CAPITAL FORMULA

There have been a number of questions of late which indicate that there are some misconceptions and a certain lack of knowledge as to the workings of the Interim Capital Formula.

I attach a succinct but, I hope, thorough description of its history and of the manner in which it is employed. There is included some speculation with regard to the future of the formula and its possible extra features.

Also attached are some reporting forms and the allocation spread sheet for 1970/71 and 1971/72. These forms should give some indication of the practical use the government and the universities make of the formula.

J. Douglas McCullough,
Director of Architectural Services.

2nd September, 1970.
Attachs.

Interim capital formula

The Interim Capital Formula was devised by the Committee on University Affairs under the chairmanship of Dr. Douglas T. Wright in consultation with representatives of the Committee of Presidents of the Universities of Ontario¹ and of the Department of University Affairs.²

In the Province of Ontario it is the device whereby capital monies are allocated to universities to enable them to carry out building programs so that increasing enrolments may be accommodated. The formula is based upon enrolment projections. Recognizing that certain types of students require more space than others, the enrolment projections are weighted by course of study and year level. That is to say, various relative values are assigned to each student category based upon the type of program and the level at which the student is studying. A unit of space is then applied to each weighted unit of enrolment. Thus a Total Cumulative Space Need is determined for any particular year. From this *Total Cumulative Space Need* is subtracted the *Existing Space* in order to calculate the *Additional Space Required*. A unit cost is applied to the *Additional Space Required* and a cumulative dollar entitlement is calculated for any one year. This entitlement is based on the projected enrolment of the following year. The figure used for existing space—now referred to as *Allocation Inventory*—is fixed; that is to say, it does not increase as space is added. Instead, a charge to the entitlement amounting to the total cumulative amount of funds provided since the inception of the formula, is the only recognition of space having been added to the *Inventory* of any institution. Thus the incentive to raise outside funds for building purposes remains

as does the incentive to build economically, since it stands to reason that if, for allocation purposes, the only record kept by the allocating body is one of cumulative cash flow, then it is in the best interests of the universities to build as much space for as little money as possible.

In order that such a formula be acceptable to all, it was necessary that agreement be reached on the values of the various inputs such as:-

- (1) Enrolment projections
- (2) Enrolment weighting
- (3) Space per weighted unit of enrolment
- (4) The allocation inventory
- (5) The cost per unit of space

In addition to the above parameters, the universities were concerned that consideration be given to:-

- (1) An allowance for part-time students
- (2) An allowance for trimester students
- (3) The age and the quality of inventories
- (4) An allowance for small scale or emergence

These inputs were calculated as follows:

(1) Enrolment projections

Five year projections by course of study and year level (graduate programs, etc.) are submitted by the universities to the Committee on University Affairs in the autumn of each year. The Committee reviews these projections both from the total provincial standpoint and from the individual institution's standpoint. In meetings with the university, the Committee comments as to the reasonableness of the projections and if it is decided that

¹The Council of Ontario Universities as of May, 1971.

²The Department of Colleges and Universities as of October 1, 1971.

adjustments are necessary, they are subsequently made and revised figures are agreed to.

(2) Enrolment weightings

The Interim Capital Formula uses weights which were arrived at by a committee of experienced administrator-academics from the Sub-Committee of the Committee on University Affairs, the Committee of Presidents of the Universities of Ontario, and the Department of University Affairs. The weights concerned space only and were relative to each other. An attempt was made to keep the weightings simple, and since the formula concerns the total assignable campus space, including dining halls, university centres, drill halls, etc. (but excluding residences and buildings for the Health Sciences) it was felt that the spread need not be too great. The resultant weights ranged from 1.0 (Arts and Science undergraduates) to 4.00 (Ph.D. in Science). There were three other weightings between these two extremes.

(3) Space per weighted unit of enrolment

A survey was made of as many other jurisdictions as was possible in order to determine the average assignable area required for a full-time student in a four year, degree-granting institution. The most reasonable figure appeared to be 130 net assignable square feet. The enrolment projections were multiplied by this figure and the total provincial space requirement was determined for each year of the five year projections. Enrolments were then weighted and when the total provincial space requirement was divided by the total weighted enrolment, a space per weighted unit of enrolment was determined for each of the five year projections. On this basis a value of 96 net assignable square feet per weighted unit of enrolment was arrived at.

(4) Allocation inventory

In 1967 the consulting firm of Taylor, Lieberfeld and Heldman was retained to conduct a provincial space inventory and utilization survey, now known as the Ontario Universities Physical Resources Survey. Preliminary lists of all assignable areas of all buildings as of September, 1969, are now available for each university. These form the basis of the Allocation Inventory. To these totals are added the areas of the buildings under construction during the time of the survey and/or those which had been approved for financial assistance by this Department before April 1st, 1969 (the time when formula cash flows began to accumulate). The allocation inventory will only decrease in value because of scheduled allowed deletions; it can never increase and, if there are no deletions, will remain constant.

(5) Cost per unit of space

A net assignable square foot is the unit of space used in the Interim Capital Formula. The cost parameter allowed was calculated from a review of the unit costs of over 400 projects financed by this Department over the past six years and by similar review of the costs of commercial buildings and other building types. The unit cost is a project cost and as such includes an amount for professional fees, equipment, furnishings, and so on. The present allowance per net assignable square foot project cost is \$55.00. This equates to approximately \$28.00 per gross square foot building cost, based on the assumption that the assignable area amounts to 60% of the gross area and that approximately 20% of the unit cost is allowed for fees, contingency and equipment. All the above weightings and values constitute the input to the Interim Capital Formula used in the calculation of allocations of capital monies for the fiscal year 1969-70.

Revised interim capital formula

For the fiscal year 1970-71 the Committee on University Affairs recommended that revisions to the formula be made to ameliorate the concerns of the universities as expressed on page seven. The allowances recommended were as follows:

(1) Part-time students:

An allowance of 24 net assignable square feet for each equivalent part-time student, calculated by dividing the total number of courses taken by part-time students by six—to be added to the Total Space Required.

(2) Trimester students:

An allowance of 12 net assignable square feet for each student enrolled in the spring term to be added to the Total Space Required.

(3) Age and quality of the inventory

A discount amounting to 30% of the area of buildings over 40 years of age (not having had a major renovation) to be allowed within the Allocation Inventory. (See 1971-72 Revisions).

(4) Emergence:

An allowance amounting to one-half of the difference between the Total Space Needed generated by the actual enrolment projection and that which would be generated by an enrolment of 4,500 weighted students to be allowed for developing or emerging institutions which are still operating on a small scale. This would allow for costs which are fixed regardless of the size of an institution.

Further revisions 1971-72:

Further revisions to the formula concerning age-quality discount and cyclical renewal were made for the calculations for 1971-72 allocations. These revisions are described in detail at the end of the Text.

Use of the formula

Allocations:

From the foregoing it can be seen that Cumulative Entitlements can be determined for any and all universities in the system for any one year up to five (or as many as have been projected). Thus, to allocate funds, the cumulative entitlement is determined. From this is subtracted formula funds already spent (since April 1st, 1969) and formula funds which are “committed” (i.e. the university has an approval for the project from the Department and has shown a certain cash need until its completion). To the remainder is added an amount for “non-formula” project needs and the total amount required for committed projects, both formula and non-formula.

A further complication this past year was that a two year total need was determined and half was allocated in each of the two years. It can be seen that it may be that allocations might not be equal to entitlements if the size of the commitments of non-formula and “pre” formula projects are too great or if the total amount agreed to by the Treasury of the Province is too small. In either event, capability of prorating the Total Space Required is essential in order to ensure an equitable distribution of funds.

Planning:

Despite the fact noted above, the formula provides an almost

perfect planning framework since it can be tabulated as a cumulative cash flow entitlement over a number of years. This enables an institution to time and size its projects to suit that cash flow (see Table M-4).

On-going activities and objectives

It will be noted that many of the values of the inputs have been arrived at in an almost arbitrary fashion. The reason they have been accepted (temporarily) is that the form of the formula allows for constant re-examination of these values and redress of any injustice. Because entitlement is cumulative and since space added is only recorded as a cash flow rather than as an addition to the inventory, an institution cannot suffer if a particular weighting or value appears to affect it adversely. If subsequent research discovers such an anomaly then the new value will produce a new cumulative entitlement; the university has not lost any allocation since all entitlements are cumulative.

It is quite likely that the universities and the Department of Colleges and Universities will concern themselves for some time to come, examining ways and means of arriving at reasonable, defensible values for weighting space per weighted unit, cost of space and so on. The results of the study concerning utilization in the Ontario Universities Physical Resources Survey and the cost studies of this Department are to be combined in a sort of matrix in an attempt to get a more relevant weighting system which concerns student contact hours and the relative unit costs of space and equipment for different fields of study and year levels.

Non-formula projects:

The inclusion of an allowance for buildings of 40 years of age or over (1970-71 calculations) allowed renovation projects to be

placed in the category of "formula" projects so that the only non-formula projects remaining at that time were as follows:

- (1) Land acquisition projects
- (2) Site services projects
- (3) Utilities projects
- (4) Alteration projects (over \$25,000).

It was acknowledged that the allowance referred to above was arbitrary and token and that research would have to continue for a proper age-quality discount.

Age-quality discount and cyclical renewal

It is most important that there be parity within the different various allocation inventories. It stands to reason that the space in a new university will be more useful, comfortable and functional than will that in one of some great age. The Ontario Universities Physical Resources Survey will furnish an age-quality profile of all inventories and it is hoped that some function of age and quality can be expressed as a percentage discount so that this parity can be achieved within the allocation inventories.

Cyclical renewal

Perhaps the operative percentage amount referred to above would be the same or a function of the one required for cyclical renewal. This proposed additional allowance to the formula would insert an amount each year into the total cumulative entitlement which would cover the cost of alterations and allow for depreciation, obsolescence and eventual replacement.

It is likely that the cyclical renewal amount will be the total of a percentage of the allocation inventory, plus a percentage of the accumulated formula funds forwarded since the inception of the formula (April 1st, 1969). In any event the form and the value of

the percentage amount, together with the search for valid weightings and unit costs, constitutes major ongoing tasks of this Branch.

Architectural Services Branch.
2nd September, 1970.

Further revisions 1971-72

Age-quality discount

It was acknowledged at the time of its introduction that the age-quality discount amounting to 30% of the area of buildings over 40 years of age was an arbitrary gesture towards parity in the allocation inventories. A revised discount amounting to 1% per year of the age of all buildings (over five years of age) has been allowed in the new five year entitlement calculations. Since the total calculated discount for all universities was too great to allow in any one year it has been spread evenly over five years from 1970-71 to 1974-75, inclusive. Thus a building which is 25 years old will have a discount amounting to 25% of its total area. The allocation inventory for this building would reflect this by a reduction of 5% for each year for five years.

Cyclical renewal

An amount equal to 1% of the allocation inventory (at \$55 per n.a.s.f.) plus 1% of the cumulative cash flow since April 1st, 1969 per year, compounded annually was added to all allocation and entitlements. Although added to allow for the cost of necessary alterations and replacements, it is not earmarked as such and the university is still free to establish its own priorities within its total allocation.

Cost study

An extensive cost study was carried out by the Architectural Services Branch of the Department. The study included all the data on building costs calculated by this Branch since 1964, in addition to costs for commercial buildings, for schools, for government buildings, and others. The study indicated that given careful planning and design the dollar index in the formula was not unreasonable. It pointed out that since the \$55 assumes a net

to gross ratio of 60% allowing a gross square foot construction cost of \$28, if the net to gross ratio were improved by some small percentage, then the dollar per square foot construction cost allowance would increase proportionately. Further, escalation in the university building area seemed to be out of proportion to that in the commercial area. It appeared that developers with a dollar incentive, and aware of cost increases in labour and material, made design decisions which tended to offset these rises thus maintaining a more gradual total cost increase. These and other factors, therefore, convinced the Committee on University Affairs to recommend the retention of the \$55 figure within the capital formula.

27th August, 1971.

Summary of attachments

(1) *C.U.A./70/M-1, 2, 3, 4, 5*

Reporting forms to be completed by the universities and submitted to the Committee on University Affairs for the annual autumn meetings.

The forms have been designed so that totals may be fed directly into computer programs for yearly allocations (attachments 2 and 3).

(2) *Flow Diagrams of Proposed Capital Allocation Spread Sheet for:*

1970-71 — 1971-72 and
1971-72 — 1972-73

(3) *Allocation spread sheet for:*

1970-71 and 1971-72

(4) *Explanatory notes for allocation spread sheet*

(5) *Allocation spread sheets at 100% and at 96.5% for:*

1971-72 and 1972-73

(6) *5 year entitlement for:*

1970-71 — 1975-76

Probable cumulative 5 year cash flow
for formula capital projects with final approvals

Subsequent to April 1, 1969 and by March 31, 1971

Project No.	Project Name	In \$ 000's		1969-70
		Approved Total Expenditure	Total Financial Assistance	

Ontario Department of University Affairs—Architectural Services Branch

CUA/70/M-1

University

Cash flow of financial assistance in \$ 000's					
70-71	1971-72	1972-73	1973-74	1974-75	REMARKS

Probable yearly 5 year cash flow for "formula" capital projects with final approval

Prior to March 31, 1969

Project No.	(list only those projects requiring additional funds) Project Name	Approved Total Expenditure	In \$ 000's		Probable Financial Assistance March 31/
			Total Financial Assistance		

Ontario Department of University Affairs—Architectural Services Branch

CUA/70/M-2

University

Balance of financial assistance in \$ 000's

REMARKS

1971-72	1972-73	1973-74	1974-75	Subsequent
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Probable yearly 5 year cash flow
for "non-formula" capital projects with final approvals

As of March 31, 1971,

Project No.	(list only those projects requiring additional funds) Project Name	In \$ 000's		
		Approved Total Expenditure	Total Financial Assistance	Probable Financial Assistance to March 31/71

Ontario Department of University Affairs—Architectural Services Branch

CUA/70/M-3

University

Balance of financial assistance in \$ 000's

REMARKS
(list formula
project which
correlates)

1971-72 1972-73 1973-74 1974-75 Subsequent

Proposed cumulative 5 year cash flow for additional projects

For interim capital formula entitlement

(All Amounts in \$ 000's)

REMARKS

Interim formula cumulative cash flow entitlement as per May 1st, 1970

Total of probable cumulative cash flow for formula

projects with approvals as of March 31, 1971

(Table M-1)

Project No.	Project name	Approval Status	Date of Last Approval	Estimated Total Expenditure	Total Financial Assistance
SA 72	Academic & Office Bldg.	6	Feb./70	2,300	2,300
*****	*****	*****	*****	2,300	2,300
SA 76	Maintenance Building	6	April/70	1,280	1,280
*****	*****	*****	*****	3,580	3,580
SA 80	Residence (Dining Area)	4	June/70	2,210	210
*****	*****	*****	*****	5,790	3,790
SA	Phys. Ed. Addition	6	Jan./70	500	500
*****	*****	*****	*****	6,290	4,290
SA	Social Science Building	1	—	2,600	2,600
*****	*****	*****	*****	8,890	6,890
SA	University Centre	—	—	3,800	3,800
*****	*****	*****	*****	12,690	10,690
SA	Air Structure	—	—	350	350
*****	*****	*****	*****	13,040	11,040

Ontario Department of University Affairs—Architectural Services Branch

CUA/70/M-4

SAMPLE

University

Probable cumulative cash flow of financial assistance					*Estimated
971-72	1972-73	1973-74	1974-75	1975-76*	
6,032	7,500	8,690	10,452	11,800	
500	2,600	2,600	2,600	2,600	
5,532	4,900	6,090	7,852	9,200	Balance
200	2,000	2,300	2,300	2,300	
5,332	2,900	3,790	5,552	6,900	Balance
200	1,280	1,280	1,280	1,280	
5,132	1,620	2,510	4,272	5,620	Balance
210	210	210	210	210	
4,922	1,410	2,300	4,062	5,410	Balance
	500	500	500	500	
4,922	910	1,800	3,560	4,910	Balance
—	150	1,400	2,600	2,600	
4,922	760	400	960	2,310	Balance
	—	—	200	1,900	
4,922	760	400	760	410	Balance
	350	350	350	350	
4,922	410	50	410	60	Balance
					Balance

Proposed cumulative 5 year cash flow for additional projects

For interim capital formula entitlement

(All Amounts In \$ 000's)

REMARKS

Interim formula cumulative cash flow entitlement as per May 1st, 1970

Total of probable cumulative cash flow for formula

projects with approvals as of March 31, 1971

(Table M-

Project No.	Project Name	Approval Status	Date of Last Approval	Estimated Total Expenditure
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Ontario Department of University Affairs—Architectural Services Branch

CUA/70/M-4

University

Probable cumulative cash flow of financial assistance

*Estimated

1971-72

1972-73

1973-74

1974-75

1975-76*

Total Financial

Assistance

Balance

Balance

Balance

Balance

Balance

Balance

Balance

Balance

Balance

Probable yearly 5 year cash flow for additional "non-formula" capital projects

Project No.	Project Name	Approval Status	Approved Total Expenditure	In \$ 000's	
				Total Financial Assistance	Probable Financial Assistance March 31/7

Ontario Department of University Affairs—Architectural Services Branch

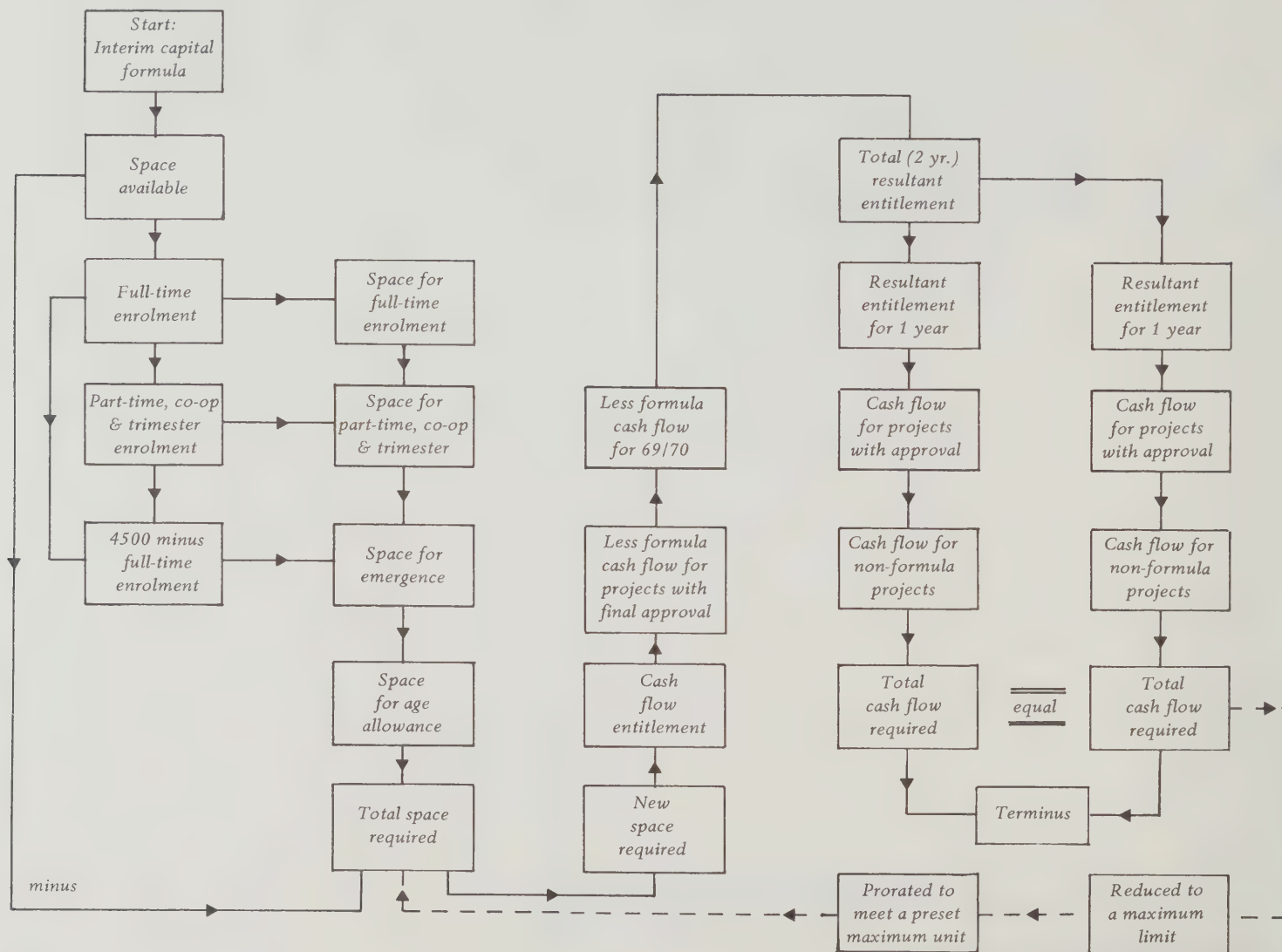
CUA/70/M-2

University

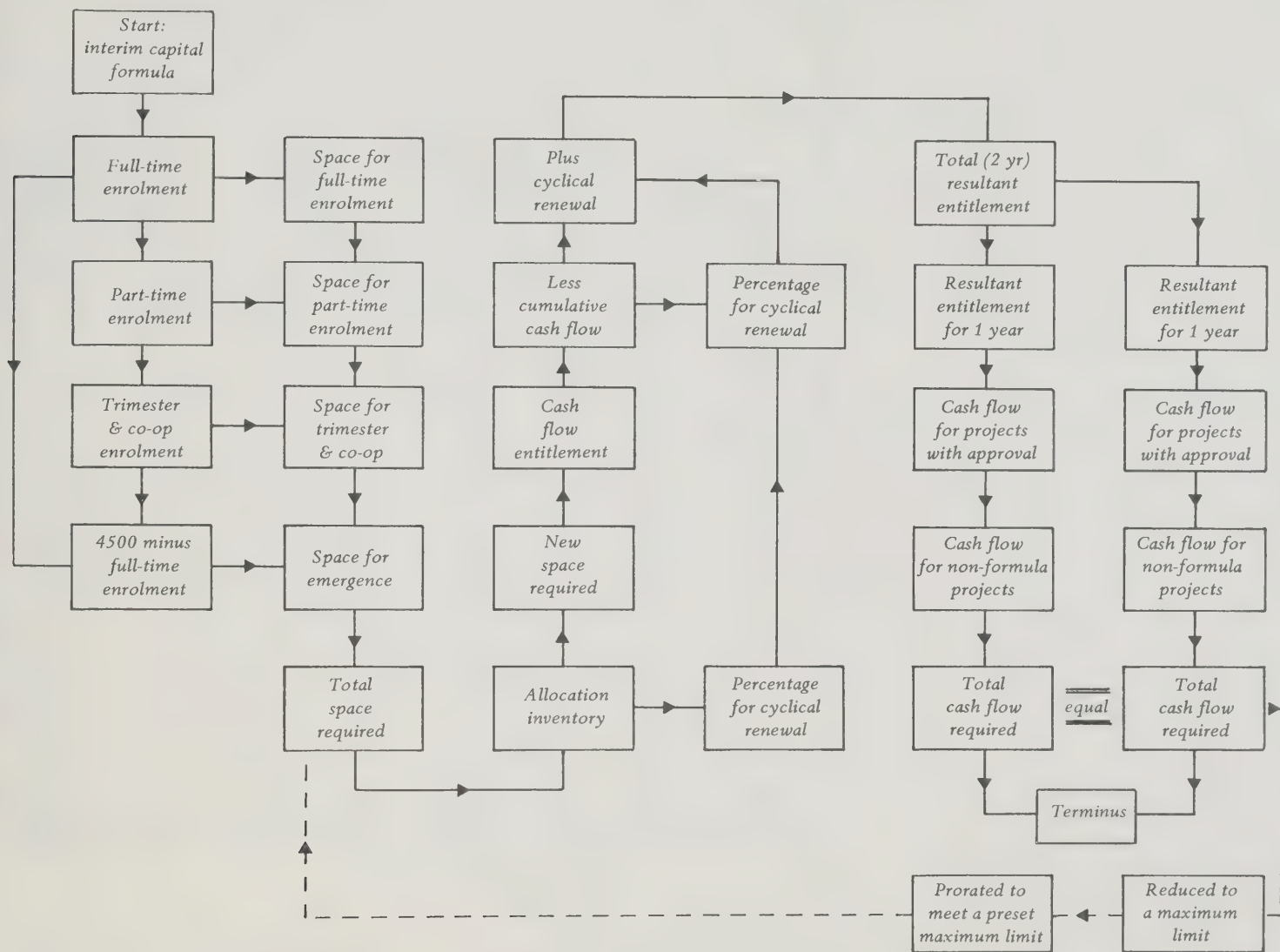
Balance of financial assistance in \$ 000's

1971-72	1972-73	1973-74	1974-75	Subsequent	REMARKS (list formula project which correlates)
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Flow diagram of capital
allocation spread sheet
for 1970/71 - 1971/72



Flow diagram of proposed
capital allocation spread
sheet for 1971/72 - 1972/73



Capital cash flow requirement 1970/71 - 1971/72

1	2	3	4	5	6	7	8	9	10	11
University or College	Space available	Space required by interim formula for full-time students	Add. space req'd. for part-time & trimester students	Additional space req'd. because of emergence	Add. space req'd. because of space over 40 yrs.	Total space req'd.	New space req'd.	Cash flow entitlement for formula projects	Less amount of formula money in req'd. cash flow for projects with final approval	Less amount of for- mula cash flow 1969-70
BR	278	327	10	52	0	390	112	6,153	0	0
CA	1,018	1,138	57	0	20	1,215	198	10,883	0	396
GU	1,117	1,030	31	0	73	1,134	17	948	0	537
LAK	351	398	12	17	0	427	77	4,210	0	0
LAU	320	303	16	64	0	384	64	3,527	0	0
Mc	1,047	1,215	24	0	18	1,258	210	11,575	4,453	907
OT	496	919	49	0	55	1,024	528	29,022	6,808	4,507
QU	1,162	1,117	24	0	57	1,198	36	1,980	6,530*	2,490
TO	2,812	2,357	67	0	230	2,654	0	0	0	0
ER	208	221	5	106	0	331	123	6,792	0	828
SC	196	259	8	86	0	354	158	8,700	0	190
TR	276	218	3	107	5	334	57	3,159	0	0
WA	1,139	1,435	34	0	0	1,470	331	18,188	370	1,769
WE	1,189	1,529	40	0	27	1,597	408	22,413	4,466	957
WI	688	824	53	0	13	890	202	11,088	4,200	828
YO	1,192	1,301	67	0	0	1,369	177	9,722	6,305	1,355
GL	154	120	8	0	0	128	0	0	0	0
Total	13,641	14,714	510	433	498	16,155	2,697	148,359	26,602	13,101

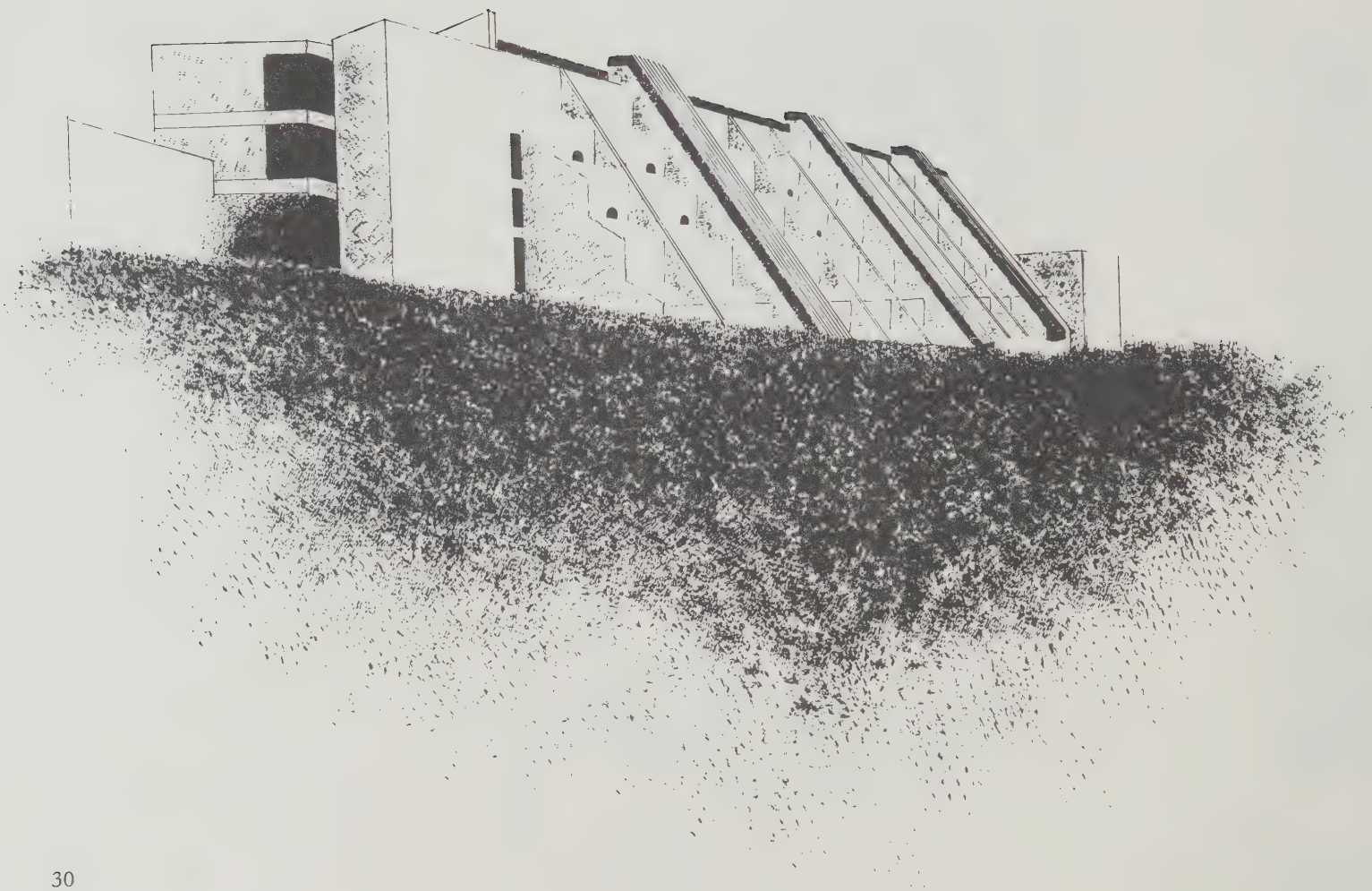
NOTE: Col. 13 indicates actual allocations and does
not necessarily reflect exact proration.

Revised 2nd June, 1970.

12 13 14 15 16 17 18 19 20

	Resultant entitlement for <i>formula</i> projects		Required cash flow for projects with final approval		Required cash flow for <i>non-formula</i> projects		Total cash flow requirement	
Total	1970-71	1971-72	1970-71	1971-72	1970-71	1971-72	1970-71	1971-72
6,153	1,613	4,540	196	0	100		1,909	
10,487	2,726	7,761	2,292	0	600		5,618	
411	0	411	45	0	1,000		1,045	
4,210	1,022	3,188	444	0	300		1,766	
3,527	874	2,653	585	0	400		1,859	
6,215	1,531	4,684	7,839	1,523	300		9,670	
17,707	4,362	13,345	8,448	568	2,700		15,510	
1,153	269	884	7,161	1,783	1,200		8,630	
0	0	0	16,983	7,460	1,000		17,983	
5,964	1,469	4,495	5,080	0	100		6,649	
8,510	2,078	6,432	0	0	0		2,078	
3,159	793	2,366	413	0	300		1,506	
16,049	3,873	12,176	1,149	0	1,000		6,022	
16,990	3,971	13,019	7,120	1,597	600		11,691	
6,060	1,567	4,493	3,374	2,100	900		5,841	
2,062	601	1,461	9,961	931	2,000		12,562	
0	0	0	0	0	0		0	
08,657	26,749	81,908	71,090	15,962	12,500		110,339	
	108,657		87,052		25,000		220,709	

**These amounts include McArthur College*



Cash flow requirements for 1970-71, 1971-72

The following notes are intended as an explanation of the tabulation referred to earlier.

(a) General

All amounts for both space and dollars are in thousands and as such have been rounded off to the nearest thousand. The calculations were made with reference to a two year period with exact allocations being determined for 1970-71.

Column 2

Space available

For purposes of allocation the inventories shown in this column are the actual areas as of September, 1969, plus the areas of any additional projects which were given approval prior to April 1st, 1969, less any proposed deletions scheduled to occur before September, 1972.

Each university will receive the list of buildings and the areas used in computing its "space available" figures.

Column 3

Space required by interim formula for full-term students

The amounts shown in this column were determined by allowing 96 N.A.S.F. per weighted unit of enrolment for the year 1972-73. The weighted enrolment for that year was computed by applying the weights of the interim formula (of 1969-70) to the projected enrolment as reported by the university.

Column 4

Additional space required for part-time and trimester students

The amounts in this column were determined by calculating the full-time equivalent enrolment of part-time students in 1972-73 and by applying an allowance of 24 N.A.S.F. per full-time equivalent student.

For trimester students (Guelph and Waterloo) the calculation was an allowance of 24 N.A.S.F. for one half the full-time equivalent of undergraduate full-time spring term enrolment for 1972-73 at each institution.

Column 5

Additional space required because of emergence

The amounts shown in this column as compensation for emergence constitute a provision over and above what the interim capital formula would indicate as an entitlement. The additional space was determined as half the amount required to increase the entitlement to that which would be generated by a weighted enrolment of 4,500.

Column 6

Additional space required because of space over 40 years of age

Additional space required because of space over 40 years of age

In order to bring some equity to the "allocation inventories" each institution with space in this category has been given an allowance amounting to 30% of its space which is more than 40 years old. Since such a calculation can only

be made once it will probably appear in future entitlement tabulations as an inventory discount rather than as an extra space allowance.

Column 7

Total space required

This represents the sum of columns 3, 4, 5 and 6.

Column 8

New space required

This represents the result of subtracting the amounts in column 2 (space available) from the amounts in column 7 (space required).

Column 9

Cash flow entitlement for formula type projects

These amounts were calculated by multiplying the total of new space required by \$55 per N.A.S.F.

Column 10

Less amount of "formula" money in "required cash flow for projects with final approval" (Cols. 15 and 16)

The amounts of money for which the Government is committed in 1970-71 and 1971-72 because of final approvals already issued (UACP 8), are indicated in columns 15 and 16. Included in these amounts are funds for "formula" projects which have received approval since April 1st, 1969, and the areas of which have not been included in "Space Available"—column 2. The amounts are as projected by the universities in their submission "Presentation On A Cash

Flow Basis of Long Term Capital Development" (Part A—revised January, 1970).

Column 11

Less amount of formula funds in the 1969-70 cash flow

As indicated for column 10, the areas for the formula projects which have received approval since April 1st, 1969, are not included in the "allocation inventory" (space available), therefore, the financial assistance for these projects is a debit against the cumulative cash flow entitlement for formula projects. Such amounts are based on actual disbursements as reported by the universities.

Columns 12, 13, 14

Resultant entitlement for formula projects

Column 12 amounts are calculated by subtracting columns 10 and 11 from column 9. Columns 13 and 14 are the prorated shares of the total in column 12.

The total allocation for two years is evenly divided but, since there are differing existing commitments against these funds in each of the two years (see columns 15 to 18), it follows that the amounts shown in columns 13 and 14 will reflect this. Columns 13 and 14 have been prorated accordingly.

Columns 15 and 16

Required cash flow for projects with final approval

These amounts are recognized commitments for projects with final approvals and are based on each university's submission of "Long Term Capital Development on a Cash Flow Basis" (Part A—revised January, 1970)

Columns 17 and 18

Required cash flow for non-formula projects

These amounts reflect the Department's judgement of needs for essential non-formula projects (e.g. alterations, site services, land acquisition) at the various institutions and are based upon the submission to the Committee on University Affairs of "Long Term Capital Development on a Cash Flow Basis" by each university. No amount has been allowed for renovations as the extra space allowed for buildings over 40 years of age is intended as recognition of this factor.

Columns 19 and 20

Total cash flow requirement

The amounts in column 19 are the sums of columns 13, 15 and 17. The total combined overall two year requirement (total of columns 19 and 20) has been arrived at by combining needs indicated in column 12, columns 15 and 16 and columns 17 and 18. Column 20 amounts will, of course, depend on individual non-formula needs in 1971-72.

General

It will be noted that the subtraction of the totals of columns 10 and 11 from the total of column 9 does not equal the total of column 12. This is because of negative amounts at Guelph and Erindale and because the amounts shown for Queen's University in columns 10 and 11 have not been deducted as yet as they represent funds for McArthur College of Education. Because weighting factors have not yet been determined, Education students have not been included in the calculations of the space

required. However, such funds will constitute a debit against future formula entitlements when the necessary weightings are determined.

Architectural Services Branch.
25th March, 1970.

Part 1 – Table prorated at 100.00 per cent of space

March 31st, 1971

Univ. or Coll.	Space Req'd for Full-time	Space Req'd. Part-time Trimester	Space Req'd for Emergence	Total Space Required	Allocation Inventory	New Space Required	Cash Flow Entitlement	Cumulative Cash Flow to March/71	Cash Flow of April/71 to March/73	Cyclical Renewal to 72-73
BR	355008.0	14352.0	38496.0	407856.0	259363.0	148493.0	8167115.00	450000.00	7000000.00	337299.30
CA	1230048.0	71832.0	0.0	1301880.0	966589.0	335291.0	18441005.00	5240000.00	4042000.00	1199477.90
GU	1047936.0	43236.0	0.0	1091172.0	963820.0	127352.0	7004360.0	553000.00	538000.00	1076642.00
LAK	390816.0	12960.0	20592.0	424368.0	346779.0	77589.0	4267395.00	961000.00	3070000.00	419556.90
LAU	332640.0	17736.0	49680.0	400056.0	323806.0	76250.0	4193750.00	974000.00	2303000.00	398696.60
MC	1237248.0	33384.0	0.0	1270632.0	1020353.0	250279.0	13765345.00	5696000.00	5458000.00	1286068.30
OT	1094688.0	63864.0	0.0	1158552.0	431868.0	726684.0	39967620.00	15052000.00	13634000.00	874754.80
QU	1059552.0	30240.0	0.0	1089792.0	1066035.0	23757.0	1306635.00	9259000.00	711000.00	1364498.50
TO	2280576.0	86760.0	0.0	2367336.0	2459293.0	0.0	0.0	0.0	1355000.00	2718772.30
SC	288000.0	10656.0	72000.0	370656.0	192666.0	177990.0	9789450.00	245000.00	4960000.00	239832.60
EP	299136.0	10728.0	66432.0	376296.0	206928.0	169368.0	9315240.00	494000.00	5211000.00	262200.80
TR	240864.0	7200.0	95568.0	343632.0	269811.0	73821.0	4060155.00	200000.00	3062000.00	318742.10
WA	1515072.0	39948.0	0.0	1555020.0	1072209.0	482811.0	26554605.00	6123000.00	9714000.00	1354769.90
WE	1703424.0	43320.0	0.0	1746744.0	1134173.0	612571.0	33691405.00	5872000.00	19828000.00	1495280.30
WI	798144.0	57792.0	0.0	855936.0	647099.0	208837.0	11486035.00	7478000.00	4463000.00	905998.90
YO	1484352.0	85632.0	0.0	1569984.0	1190532.0	379452.0	20869860.00	9217000.00	8798000.00	1544225.20
GL	120000.0	0.0	0.0	120000.0	147763.0	0.0	0.0	0.0	0.0	0.0
TOT	15477504.0	629640.0	342768.0	16449912.0	12699087.0	3870545.0	212879975.00	67814000.00	94147000.00	15796816.40

Cyclical renewal is 1.0000 per cent

— updated allocation inventories as of March 30th, 1971

— minimum likely requirements for formula commitments

— McArthur College not included in 71/72 formula commitments for Queen's

— amount for OVC included in Guelph's non-formula commitments

Part 2 – Table prorated at 100.00 per cent of space

March 31st, 1971

Univ. or Coll.	Resultant entitlement for formula projects			Required cash flow for projects with final approval		Required cash flow for non-formula projects		Total cash flow required	
	Total	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73
BR	1054414.30	231374.30	823040.00	4326000.00	2700000.00	247000.00	705000.00	4804374.30	4228040.00
CA	10358482.90	2273002.85	8085480.05	3409000.00	949000.00	1233000.00	693000.00	6915002.85	9727480.05
GU	6990002.00	1533843.77	5456158.23	2263000.00	600000.00	866000.00	1589000.00	4662843.77	7645158.23
LAK	655951.90	143938.12	512013.78	3516000.00	1182000.00	202000.00	625000.00	3861938.12	2319013.78
LAU	1315446.60	288653.65	1026792.95	2350000.00	0.0	350000.00	250000.00	2988653.65	1276792.95
MC	3897413.30	855224.81	3042188.49	7045000.00	682000.00	835000.00	2024000.00	8735224.81	5748188.49
OT	12156374.80	2667521.37	9488853.43	14368000.00	3854000.00	168000.00	1554000.00	17203521.37	14896853.43
QU	0.0	0.0	0.0	738000.00	43000.00	773000.00	600000.00	1511000.00	643000.00
TO	1363772.30	299257.95	1064514.35	14265000.00	10644000.00	493000.00	730000.00	15057257.95	12438514.35
SC	4824282.60	1058611.40	3765671.20	2300000.00	2660000.00	283000.00	275000.00	3641611.40	6700671.20
ER	3872440.80	849744.99	3022695.81	2965000.00	2983000.00	0.0	195000.00	3814744.99	6200695.81
TR	1116897.10	245085.15	871811.95	1939000.00	1267000.00	433000.00	260000.00	2617085.15	2398811.95
WA	12072374.90	2649088.94	9423285.96	5771000.00	4426000.00	399000.00	982000.00	8819088.94	14831285.96
WE	9486685.30	2081700.85	7404984.45	15956000.00	8472000.00	406000.00	600000.00	18443700.85	16476984.45
WI	451033.90	98972.15	352061.75	6020000.00	0.0	95000.00	1065000.00	6213972.15	1417061.75
YO	4399085.20	965308.65	3433776.55	5383000.00	4086000.00	1790000.00	2960000.00	8138308.65	10479776.55
GL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOT	74014657.90	16241328.95	57773328.95	92614000.00	44548000.00	8573000.00	15107000.00	117428328.95	117428328.95
		74014657.90		137162000.00		23680000.00		234856657.90	

Ratio for column number 12 is 21.9434 per cent

– updated allocation inventories as of March 30th, 1971

– minimum likely requirements for formula commitments

– McArthur College not included in 71/72 formula commitments for Queen's

– amount for OVC included in Guelph's non-formula commitments

Part 1 – Table prorated at 96.59 per cent of space

March 31st, 1971.

Univ. or Coll.	Space Req'd for Full-time	Space Req'd. Part-time Trimester	Space Req'd for Emergence	Total Space Required	Allocation Inventory	New Space Required	Cash Flow Entitlement	Cumulative Cash Flow to March/71	Cash Flow of April/71 to March/73	Cyclical Renewal to 72-73
BR	355008.0	14352.0	38496.0	393948.1	259363.0	134585.1	7402181.05	450000.00	7000000.00	337299.30
CA	1230048.0	71832.0	0.0	1257485.9	966589.0	290896.9	15999328.99	5240000.00	4042000.00	1199477.90
GU	1047936.0	43236.0	0.0	1053963.0	963820.0	90143.0	4957866.86	553000.00	538000.00	1076642.00
LAK	390816.0	12960.0	20592.0	409897.1	346779.0	63118.1	3471492.79	961000.00	3070000.00	419556.90
LAU	332640.0	17736.0	49680.0	386414.1	323806.0	62608.1	3443444.95	974000.00	2303000.00	398696.60
MC	1237248.0	33384.0	0.0	1227303.4	1020353.0	206950.4	11382274.62	5696000.00	5458000.00	1286068.30
OT	1094688.0	63864.0	0.0	1119045.4	431868.0	687177.4	37794755.66	15052000.00	13634000.00	874754.80
QU	1059552.0	30240.0	0.0	1052630.1	1066035.0	0.0	0.0	9259000.00	711000.00	1364498.50
TO	2280576.0	86760.0	0.0	2286609.8	2459293.0	0.0	0.0	0.0	1355000.00	2718772.30
SC	288000.0	10656.0	72000.0	358016.6	192666.0	165350.6	9094284.65	245000.00	4960000.00	239832.60
ER	299136.0	10728.0	66432.0	363464.3	206928.0	156536.3	8609496.83	494000.00	5211000.00	262200.80
TR	240864.0	7200.0	95568.0	331914.1	269811.0	62103.1	3415673.17	200000.00	3062000.00	318742.10
WA	1515072.0	39948.0	0.0	1501993.8	1072209.0	429784.8	23638164.91	6123000.00	9714000.00	1354769.90
WE	1703424.0	43320.0	0.0	1687180.0	1134173.0	553007.0	30415386.54	5872000.00	19828000.00	1495280.30
WI	798144.0	57792.0	0.0	826748.6	647099.0	179649.6	9880726.99	7478000.00	4463000.00	905998.90
YO	1484352.0	85632.0	0.0	1516447.5	1190532.0	325915.5	17925354.93	9217000.00	8798000.00	1544225.20
GL	120000.0	0.0	0.0	115908.0	147763.0	0.0	0.0	0.0	0.0	0.0
TOT	15477504.0	629640.0	342768.0	15888970.0	12699087.0	3407826.1	187430432.95	67814000.00	94147000.00	15796816.40

Cyclical renewal is 1.0000 per cent

– updated allocation inventories as of March 30th, 1971

– minimum likely requirements for formula commitments

– McArthur College not included in 71/72 formula commitments for Queen's

– amount for OVC included in Guelph's non-formula commitments

Part 2 — Table prorated at 96.59 per cent of space

March 31st, 1971

Univ. or Coll.	Resultant entitlement for fomula projects			Required cash flow for projects with final approval		Required cash flow for non-formula projects		Total cash flow required	
	Total	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73
BR	289480.35	27252.94	262227.41	4326000.00	2700000.00	247000.00	705000.00	4600252.94	3667227.41
CA	7916806.89	745322.66	7171484.23	3409000.00	949000.00	1233000.00	693000.00	5387322.66	8813484.23
GU	4943508.86	465403.44	4478105.42	2263000.00	600000.00	866000.00	1589000.00	3594403.44	6667105.42
LAK	0.0	0.0	0.0	3516000.00	1182000.00	202000.00	625000.00	3718000.00	1807000.00
LAU	565141.55	53204.89	511936.67	2350000.00	0.0	350000.00	250000.00	2753204.89	761936.67
MC	1514342.92	142566.83	1371776.08	7045000.00	682000.00	835000.00	2024000.00	8022566.83	4077776.08
OT	9983510.46	939891.13	9043619.33	14368000.00	3854000.00	168000.00	1554000.00	15475891.13	14451619.33
QU	0.0	0.0	0.0	738000.00	43000.00	773000.00	600000.00	1511000.00	643000.00
TO	1363772.30	128391.46	1235380.84	14265000.00	10644000.00	493000.00	730000.00	14886391.46	12609380.84
SC	4129117.25	388733.07	3740384.18	2300000.00	2660000.00	283000.00	275000.00	2971733.07	6675384.18
ER	3166697.63	298126.70	2868570.93	2965000.00	2983000.00	0.0	195000.00	3263126.70	6046570.93
TR	472415.27	44475.23	427940.04	1939000.00	1267000.00	433000.00	260000.00	2416475.23	1954940.04
WA	9155934.81	861979.56	8293955.25	5771000.00	4426000.00	399000.00	982000.00	7031979.56	13701955.25
WE	6210666.84	584699.21	5625967.63	15956000.00	8472000.00	406000.00	600000.00	16946699.21	14697967.63
WI	0.0	0.0	0.0	6020000.00	0.0	95000.00	1065000.00	6115000.00	1065000.00
YO	1454580.13	136940.50	1317639.62	5383000.00	4086000.00	1790000.00	2960000.00	7309940.50	8363639.62
GL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOT	51165975.26	4816987.63	46348987.63	92614000.00	44548000.00	8573000.00	15107000.00	106003987.63	106003987.63
		51165975.26		137162000.00		23680000.00		212007975.26	

Ratio for column number 12 is 9.4144 per cent

Limit for prorating of total space required is 106000000.

5 year entitlement 1970-71 to 1975-76

SAMPLE	70/71	71/72	72/73	73/74	74/75	75/76
Full time	0.	1165536.	1311648.	1484352.	1635936.	1799520.
Part time	0.	68064.	77016.	85632.	90072.	92112.
Trimester	0.	0.	0.	0.	0.	0.
Emergence	0.	0.	0.	0.	0.	0.
Total need	0.	1233600.	1388664.	1569984.	1726008.	1891632.
Alloc. inv.	0.	1197587.	1194059.	1190532.	1187004.	1183477.
New need	0.	36013.	194605.	379452.	539004.	708155.
Entitlement	1980741.	10703272.	20869883.	29645213.	38948544.	0.
Cyc. ren.	0.	750843.	1550045.	2384987.	3217990.	0.
Total ent.	1980741.	11454114.	22419928.	32030201.	42166534.	0.
CCF	9217000.	14247000.	18015000.	18015000.	18015000.	0.
Rsult. ent.	0.	0.	4404928.	14015201.	24151534.	0.

System	70/71	71/72	72/73	73/74	74/75	75/76
Full time	0.	13499712.	14467104.	15477504.	16410816.	17387904.
Part time	0.	477720.	518424.	563640.	603600.	643344.
Trimester	0.	62592.	67452.	70800.	74436.	77676.
Emergence	0.	557616.	454080.	342768.	221376.	98592.
Total need	0.	14597640.	15507060.	16454712.	17310228.	18207516.
Alloc. inv.	0.	13339702.	12994351.	12699084.	12306577.	12068664.
New need	0.	1920673.	2814614.	3870547.	5023886.	6156359.
Entitlement	105637029.	154803776.	212880109.	276313730.	338599767.	0.
Cyc. ren.	0.	8014976.	16474089.	25078196.	33553623.	0.
Total ent.	105637029.	162818752.	229354198.	301391926.	372153390.	0.
CCF	67814000.	131222000.	161961000.	170681000.	172219000.	0.
Rsult. ent.	64120518.	51328330.	74641474.	136076833.	199961123.	0.



